

REMARKS

Claims 1-5 are all the claims pending in the application. Claims 1-5 presently stand rejected.

The Examiner is respectfully requested to acknowledge receipt and indicate approval of the drawings filed on February 8, 2002.

Claims 1-5 are rejected under 35 U.S.C. § 112, second paragraph.

Claims 1, 2 and 5 are further rejected under 35 U.S.C. § 102(b) as being anticipated by Hosomi et al. (USP 5,820,068).

Claims 3 and 4 are further rejected under 35 U.S.C. § 103(a) as being unpatentable over Hosomi et al. (USP 5,820,068) in view of Sato (USP 6,502,784). For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

§112 Rejection

The Examiner asserts that claim 1 is unclear in regard to how the guide portions are disposed with respect to the installation states and in regard to the recited locus of the center axis of the roll of paper. In response, Applicant has amended claim 1 merely to clarify that which was already present in the claims. In particular, claim 1 has been amended to make it clear that the first and second guide portions are disposed at locations where the roll of paper is retained when the diameter of the roll diminishes, when the printer is in first and second installation states, respectively, e.g., vertical or horizontal. Claim 1 has been further amended to clarify that it is the movement of the center axis of the roll of paper in the two different installation states

and the inner surface of the paper holder between the first and second guide portions that define the recited hypothetical plane (See fig. 2 and attendant description at page 10, line 22 through page 11, line 8.

In view of the above mentioned clarifying amendments to claim 1, Applicant submits that claim 1 satisfies all requirements of 35 U.S.C. § 112 and as such the §112 rejection should be withdrawn.

Prior Art Rejections

The present invention relates to a printer capable of detecting when the paper is near its end. A versatile detection is performed with a single sensor by disposing detectors at positions that make the detectors workable when the printer is placed in different installation states, e.g., either vertically or horizontally. As described in the specification and illustrated, for example, at figures 1-4, the different detectors, although each part of the same single sensor, are respectively operable to detect the near end of the paper roll when the paper roll is retained in corresponding different locations (See fig. 1).

The Examiner asserts that claims 1, 2 and 5 are anticipated by the disclosure of Hosomi et al. Hosomi relates to a printer capable of disposing a near end sensor and a detection lever rotatably at a plurality of positions according to an installation state of the printer. The detection lever is provided with a detector and a protruding portion protruding toward a roll of paper. The detector is disposed so as to protrude in the vicinities of guide portions for guiding the paper roll when the diameter of the paper roll gets smaller. However, Hosomi fails to teach or suggest at least the requirement that the first detector is a detector for the first installation state disposed

closer to the first guide portion, and the second detector is a detector for the second installation state, disposed closer to the second guide portion. That is, the detectors of the claimed invention are disposed closer to the corresponding first guide portion or the corresponding second guide portion. The amount of remaining paper, when the paper is retained into one of the different guide portions, can be detected by the detector corresponding to the particular guide portion. Moreover, this detection is performed when the printer is in either of the two installment states and the operations of the detectors are sensed by a single sensor.

On the other hand, both of the two detectors disclosed in Hosomi are provided so as to detect the paper retained in one of the guide portions. Hosomi is different from the claimed invention in that both of the two detectors are disposed in the vicinity of the one of the guide portions. The configuration disclosed in Hosomi requires movement of the switch and the detectors when detecting paper to be retained into the other guide portion.

The present invention, by having the above configuration, has an advantage in cost compared to the references since operations of two detectors can be sensed by using a single sensor. The present invention also has an advantage, which the reference cannot attain, in that a user need not handle or move the detectors.

Accordingly, claim 1 is not anticipated by Hosomi and the §102 rejection thereto should be withdrawn. Claims 2 and 5 are patentable over Hosomi for at least the same reason.

In regard to the §103 rejection, the Examiner asserts that claims 3 and 4 are unpatentable over the combination of Hosomi and Sato. Sato relates to a roll paper remaining amount detecting unit which can adjust a position of a near end sensor by using a notch mechanism. The

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 10/067,935


invention of Sato can operate plural kinds of paper rolls having different inner diameters. Sato, however, does not compensate for the deficiency of Hosomi described above. Accordingly, neither claim 3 nor claim 4, which both depend from claim 1, are rendered obvious by the proposed combination of Hosomi and Sato. For at least this reason, the rejection of claims 3 and 4 should be withdrawn.

Conclusion

In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims 1-5, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


Kevin M. Barner
Registration No. 46,075

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER

Date: December 9, 2003

Attorney Docket No.: Q68468